Summary of Considered Alternatives

for

Project 1440-13/15-00
WIS 23 (Fond du Lac - Plymouth)
Fond du Lac and Sheboygan Counties

SUMMARY OF CONSIDERED ALTERNATIVES

DEVELOPMENT OF ALTERNATIVES

The Council on Environmental Quality (CEQ) recognizes in its regulations for implementing the National Environmental Policy Act that many alternatives may exist that address a project's purpose and need. The WIS 23 project team identified several possible improvement concepts for the study corridor, but to remain consistent with the CEQ's goal of fostering better and shorter environmental impact statements, only reasonable alternatives are presented and evaluated in detail in the Draft EIS.

Reasonable alternatives are those that are practical and feasible from system wide engineering, environmental, and economic standpoints relative to meeting the project purpose and need. As discussed in Section I, reasonable alternatives for improving WIS 23 are those that meet the objectives of the state's "Corridors 2020 Plan." The objectives of the Corridors 2020 Plan include serving the economic and social structure of the region and assisting the state's economic development potential.

Section I of this environmental document summarizes existing WIS 23 deficiencies, including traffic volumes, level of service, truck percentages, and safety. These factors indicate the existing two-lane highway is inadequate to serve existing and future traffic demand. These alternatives were screened from a range of alignments investigated during data gathering and reviewed at two public informational meetings. The screening process consisted of:

- Comparison and evaluation of alternative alignments in terms of their ability to provide local, regional, and statewide transportation service consistent with Corridors 2020.

- Comparison in terms of reducing through and local traffic conflicts, improving safety, reducing congestion, and providing an acceptable operational level of service while minimizing environmental impacts at new locations.

- Consideration of citizen and local government input through public information meetings and individual property owner contacts.

- Consideration of alternatives that minimize environmental impacts.

- Evaluation of area economic and population data for compliance with the requirements of Executive Order 12898, Environmental Justice.

- Agency coordination, including wetland delineation and identification of natural resource concerns along the project corridor.

- Historical and archaeological investigations to identify resources eligible for the National Register of Historic Places.

- Consideration of secondary and cumulative impacts of the project.

- Estimation and consideration of each alternative's cost and related economic impacts.

- Consideration of air and noise impacts.

- Consideration of impacts on existing businesses, residences, and farms.

As part of the alternative development process, a Public Informational Meeting was held to give the general public an opportunity to suggest and help develop possible alternatives. Subsequently, several alignments were

considered during the development of the Build Alternatives, besides those presented in this EIS. These alignments were shown on aerial mosaics and were presented to regulatory agencies, local officials and to the WIS 23 Public Advisory Committee (PAC). The PAC was created from local officials and volunteers at the Public Informational Meeting. Comparisons of environmental impacts along with commentary received from these meetings as well as input from citizens were used to add, revise, and delete alternatives. Only those alternatives considered to be reasonable were carried forward for study.

FACILITY TYPE

Guidelines in WisDOT's facilities development manual (FDM) for a Corridors 2020 Connector Highway recommend expansion consideration to a four-lane section when the average daily traffic (ADT) reaches 8700 vehicles per day in the design year (2030). Much of WIS 23 has over 8700 vehicles per day as of the year 2000. The entire length of WIS 23 will surpass 8700 vehicles per day in the year 2020. WIS 23 build alternatives will be constructed as a four-lane roadway. Access characteristics vary for each of the facility options described below.

No Build (No change)

- The No-Build alternative does not change the existing roadway or access characteristics.

Three-Lane Highway (Passing Lanes)

- Passing lane additions require strict access control within the length of the passing lane. Access is limited to minimal driveway/field entrances throughout the passing section. Access via public streets should not be allowed in passing lane sections.

Four-Lane Highway

Access characteristics vary for each of the four-lane roadway alternatives.

- The lowest level of access improvement includes constructing a four-lane roadway while leaving access as it is. Access would be provided on side-roads and driveways, although removal or combining driveways and field entrances to WIS 23 would be done when possible. Immediate improvements such as right and left turn lanes at side roads, where needed, to improve traffic flow could be constructed.
- The next level of access improvement would remove as many access points as reasonable, including closing low traffic roads or grade separating others. Other, busier crossroad locations would be considered for future interchange locations. As a four-lane limited access highway, WIS 23 could be designated as an expressway, providing for future access removals as they become available. Immediate improvements such as right and left turn lanes at side roads could be constructed.
- Lastly, constructing the four-lane roadway as a freeway removes all driveways and side roads. Freeway design standards require grade separating many intersecting roads and constructing several interchanges.

The WIS 23 Public Advisory Committee recommended an expressway facility. The July 2003 Value Planning Study, Appendix E, also recommends an expressway facility to serve local traffic in addition to the through traffic. WisDOT concurs with these decisions to provide an expressway facility. Recommendations for side road access closures and/or future use will be addressed in the long-range corridor plan and included in the Final EIS.

ALTERNATES FOR DETAILED STUDY

No-Build Alternate

The No-Build Alternative involves the continued use of the existing WIS 23 for traffic without reconstruction or enhancements of the existing roadway. This option would not address traffic capacity or traffic operation problems.

Advantages of the No-Build Alternative are:

- Right-of-way acquisition would not be necessary.
- Displacement of residences or businesses caused by construction would not occur.
- Impacts to environmentally sensitive areas would be avoided.

Disadvantages of the No-Build Alternative include the following:

- Current and future traffic congestion on the existing route would not be addressed.
- Increasing traffic volumes would magnify traffic operations and safety problems along the route.
- Highway would not provide highway system continuity between US 151 and the four-lane section of WIS 23 to the east.
- Highway would not fulfill its designation as a connector route in Wisconsin's Corridors 2020 planned system that links the economic and tourism centers.
- Does not address dangerous mix of slow moving farm vehicles and their difficulty crossing highway traffic.
- The 235 existing access points would continue to create crash potential along WIS 23.
- Air and noise impacts to the area would increase with access problems and traffic congestion.
- Future real estate acquisition would be more difficult and more expensive as development continues on WIS 23.
- Level of Service (LOS) falls from current level of C to D in design year 2030. See Appendix A.

The No-Build Alternative does not meet the purpose and need of the project. This alternate will be carried through discussion for comparison purposes.

Build Alternates

The total length of the existing route of WIS 23 is 19.1 miles. All alternates begin about ½ mile west of County K in the City of Fond du Lac and follow the existing alignment to the top of the Niagara Escarpment. There are three major alternatives being considered, with one of those alternatives having four connection options. All three alternatives consider improvements to the County K area in Fond du Lac and the Old Plank Trail possibly being extended to US 151 in the City of Fond du Lac. Each of the three alternatives follow the existing highway alignment from just east of County U in Sheboygan County easterly for about 6.2 miles until ending at County P near the City of Plymouth.

Alternate 1*: Highway Expansion Along Existing Roadway. See Figure II-1.

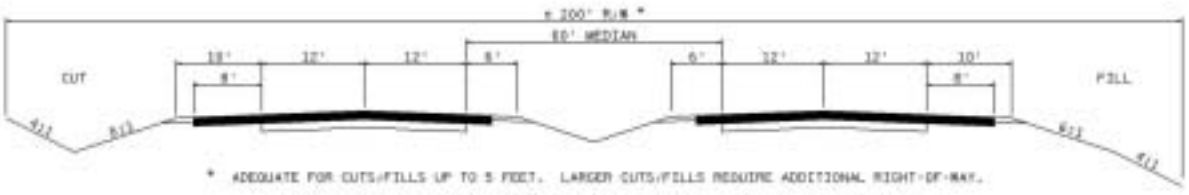
Alternate 2*: Highway expansion along the existing roadway, with a four-mile relocation north of existing WIS 23 between Log Tavern Road and Sunrise Road. See Figure II-2.

Alternate 3*: Highway expansion as a convertible freeway, on relocation south of existing WIS 23 from County UU to Log Tavern Road and north of existing WIS 23 to Sunrise Road. There are two possible connections of this alternative to existing WIS 23 near County UU and two connections near Log Tavern Road. See Figure II-4 to Figure II-7.

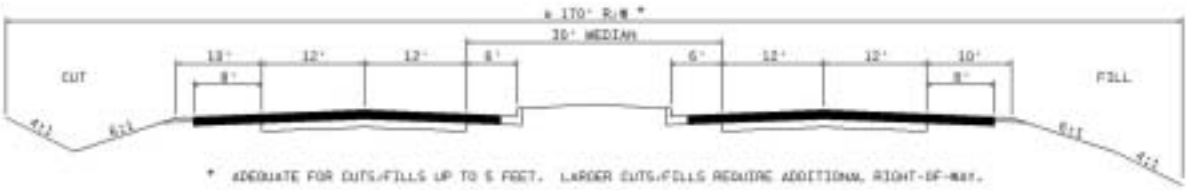
*NOTE: Prior meetings, documents, and discussions mention alternatives A, B, C, D, and E. From here forward, maps and discussions will refer to A through E as segments within an alternative. The alternatives will be referred to as Alt 1 (Segment A), Alt 2 (Segment A-B-A), Alt 3 (Segment A-C-B-A), Alt 4 (A-D-C-B-A), Alt 5 (A-C-E-B-A), and Alt 6 (A-D-C-E-B-A). In general, Alternatives 3, 4, 5, and 6 have nearly the same impacts throughout the study, as Segment C remains in each, and only slightly different at the connections to Segment A and B. Discussion within this document will be such that any Alternative, 3 through 6, could be substituted for another while only Alternative 3 is being referred to. See the Environmental Matrix in Section IV for route segments and alternatives.

Alternative impacts and estimates are based on a rural section consisting of two 12-foot driving lanes in each direction separated by a 60-foot grass median. In the area of the City of Fond du Lac, an urban section with a 30-foot raised median was used up to County UU.

TYPICAL CROSS SECTIONS FOR HIGHWAY 23



RURAL CROSS SECTION BETWEEN CTH UU AND CTH P



URBAN CROSS SECTION BETWEEN USH 151 AND CTH UU

Alternate 1 Highway Expansion Along Existing Roadway

Alternate 1 is approximately 19.1 miles in length (See Figure II-1) below for the location of this alternative). This alternate utilizes as much of the existing roadway as possible by using it for one set of lanes. Consideration will be given to straightening curves and reducing residential and business impacts. Alternate 1 could be built as an expressway, with private driveway and public road access limited when possible. Turn lanes will be incorporated at any crossroad intersections of WIS 23. Consideration will be given to acquire right-of-way for future interchanges in the areas of County UU, CTH W, County G, and County A. An urban expressway section will be recommended for the Fond du Lac section from the US 151 bypass of Fond du Lac to County UU. Reduced speeds will likely be required through this section. On the east end of the corridor limits, WIS 23 crosses north of the Wade House State Park and through the Kettle Moraine State Forest. Both of these public use properties need to be avoided as much as possible or have minimized impacts from the highway expansion upon them. Building the typical 4-lane divided section will have 4(f) impacts on all the alternatives.

Figure II-1

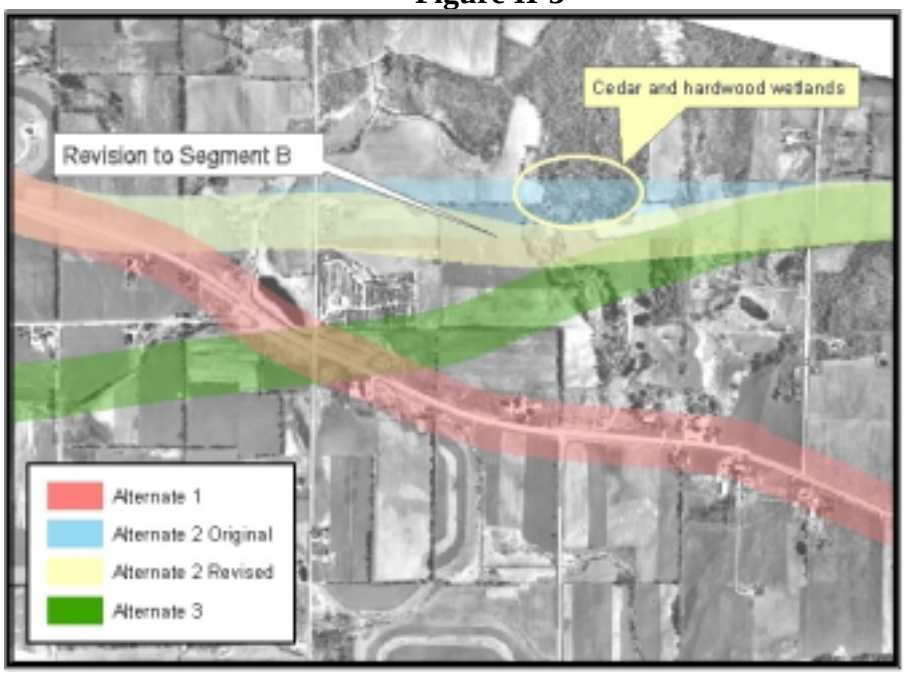
Alternate 2 Highway expansion along the existing roadway, with a four-mile relocation between Log Tavern Road and Sunrise Road.

Alternate 2 is approximately 18.8 miles in length. This alternate has the same termini as Alternate 1 and utilizes most of the same existing highway except in the area using Segment B, approximately 4.6 miles of new

roadway between Log Tavern Road and Sunrise Road and is located about ¼ of a mile north of Chickadee Road (See Figure II-2) below for the location of this alternative). The existing section of WIS 23 that this alternate avoids has a high concentration of private and farm access points. In addition, several side roads intersect WIS 23 on curves or have steep approaches to the highway. These access and geometric problems contribute to the highest concentration of crashes and deaths along the entire corridor studied. This relocated section of Alternate 2 will have no private access. WisDOT will consider the possibility of grade separating or closing some of the existing crossroads. Consideration will be given to provide right-of-way for a future interchange at County G. The corridor chosen for the EIS study crosses through a high quality cedar swamp. Preliminary reviews by the WDNR found unique cedar swamp conditions in the Forest Township. This pristine area is found in roughly the northern two-thirds of the initial corridor shown (See Figure II-3 below). The corridor study area was widened by about 300 feet at the cedar swamp location. Avoidance of this area is possible on the south third of the corridor in combination with adding approximately 23 acres to the study, south of the initial corridor (see section VI for coordination).

Figure II-2

Figure II-3



Alternate 3 (4-5-6) Highway expansion as a convertible freeway, on relocation from County UU to Sunrise Road. Segments C & D - West end connections. Segments C & E - East end connections.

This alternate would be either 19 or 19.1 miles in length, depending upon the end connections (See Figure II-4, II-5, II-6, & II-7 below for the location of this alternative)**.** Alternative 3 utilizes the least amount of existing highway and would likely be built as a freeway section in the new alignment areas. This alternate also uses the Segment B section of new roadway ¼ mile north of Chickadee Road, avoiding the section of WIS 23 described

above in Alternate 2. As with the other alternates, this option stays on alignment from Sunrise Road through the uplands up the Kettle Moraine State Forest to the project termini near Plymouth. In this section, bringing the roadway up to freeway status would greatly impact residents and the public lands along this section of WIS 23. This alternate provides two different scenarios for connecting WIS 23 into the urbanizing area east of the City of Fond du Lac. Segment C allows the relocation of WIS 23 to begin between County K and County UU, with an interchange at County UU located about ½ mile south of the existing intersection (See Exhibit II-4 & II-5 below). Segment E would allow for an interchange at the existing County UU/WIS 23 location and the highway relocation to begin about ¾ mile east of the interchange (See Exhibit II-6 & II-7 below). Segment C allows for this relocated section to continue easterly north of Chickadee Road, crossing WIS 23 near Pit Road (See Exhibit II-4 & II-6 below). Segment D similarly continues easterly north of Chickadee Road with a crossing of WIS 23 near Log Tavern Road (See Exhibit II-5 & II-7 below).

Figure II-4

Figure II-5

Figure II-6

Figure II-7

Related Issues For All Build Alternatives

City of Fond du Lac Urban Area

Access, high traffic, and physical terrain have combined to create dangerous conditions in the east Fond du Lac area, from the US 151 bypass interchange with WIS 23 to County UU. WisDOT has determined that an interchange at County K is not justified. County K is located within a growing urban area with lower speeds and within two-thirds of a mile from an interchange at US 151; both situations do not comply with WisDOT standards. The options include:

At Grade Intersection

This option would not change the intersection as it currently is. Traffic signals, lower speed limits, turn lanes, and other safety enhancements could be implemented.

Grade Separate CTH K

This option would likely include building bridge overpasses for WIS 23 over County K. WIS 23 traffic would not access County K and vice versa. Local traffic would need to be re-routed either 1.2 miles north or 1.1 miles south to the closest connecting streets into the City of Fond du Lac. Other possibilities would be to build connecting streets from County K westward within the City of Fond du Lac, or frontage roads easterly to County UU. These options would require grade separations of the newly constructed US 151 bypass of the City of Fond du Lac, and several real estate acquisitions, respectively.

Low Volume Access Connections

This option would include building bridge overpasses for WIS 23 over County K. Traffic would have on and off access to WIS 23 on the west side of County K using segregated lanes. County K traffic would yield to WIS 23 traffic without full merge lanes. Figure II-8 to the right shows a concept of this type of connection.

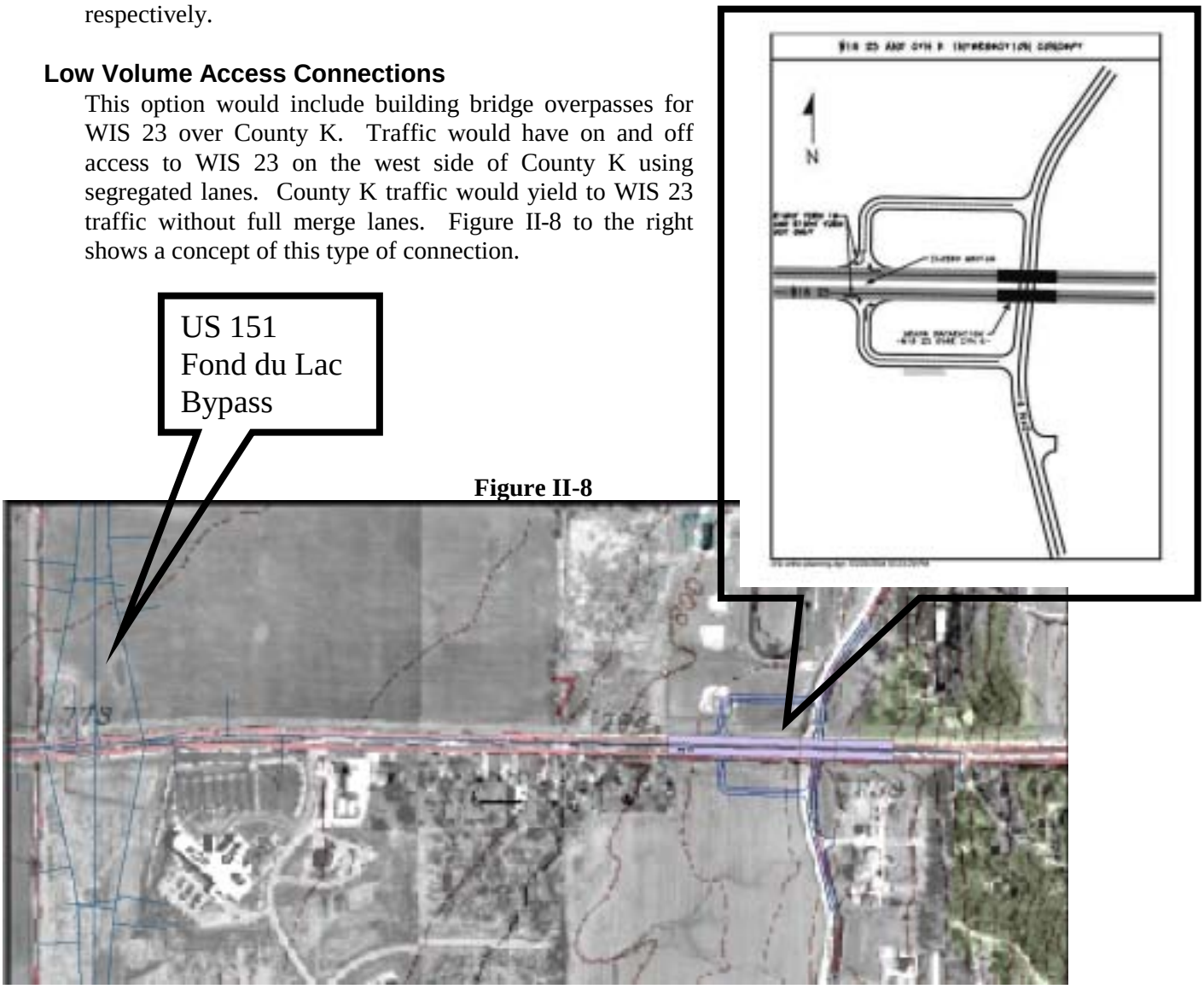
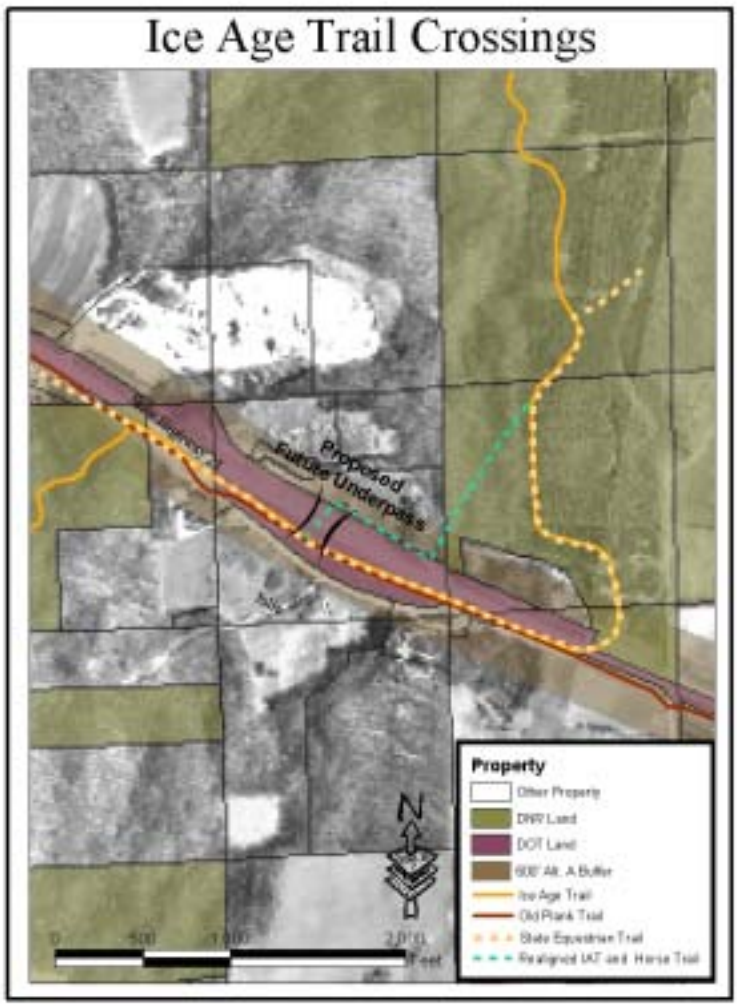


Figure II-8

Ice Age Trail

The Ice Age Trail (IAT) crosses WIS 23 at the Kettle Moraine Forest and is a significant trail, one of eight nationally recognized trails. The IAT crossing of WIS 23 is considered a 4(f) property that requires impact evaluation according to Federal Law. Avoidance of the IAT is first considered, with minimization and mitigation of the impacts to follow. Since the IAT crosses perpendicular to WIS 23, and because there is no opportunity to avoid it in the nearby area, the impacts to the IAT need mitigation. As agreed to by state and federal agencies (Section VI for coordination), the IAT and State Equestrian Trail will cross below WIS 23, with a specifically designed box culvert or bridge with a minimum width of twelve feet, see Figure II-9 below

Figure II-9



Old Plank Trail Extension

The Old Plank Road Trail currently connects the City of Sheboygan with the Town Greenbush, on the northern extents of the Cities of Sheboygan Falls, Plymouth and the Village of Kohler. The Old Plank Trail corridor lies within state-owned highway right-of-way and is maintained by the Sheboygan County Planning and Parks Department. The trail is adjacent to WIS 23 on the south side of the road for most of its length. Sheboygan County does document the possible extension of the trail to Fond du Lac County (Old Plank Road Trail Plan, 1991). The US 151 bypass of the City of Fond du Lac is adding a recreation trail along the entire route of the bypass. It will connect the Wild Goose State Trail south of the city and the WIS 149 trail in Peebles. The Fond du Lac County Board passed a resolution (See Appendix D) supporting a trail connecting the US 151 trail with the Old Plank Trail in Sheboygan County.

A continuous trail connecting the US 151 trail to the Old Plank Trail is only one option depending on which alternative is selected. The possibility exists to provide a bicycle and pedestrian connection by paving wider shoulders, designating bicycle lanes, routing bicyclists on the town road system, and adding trail segments to cross barriers (rivers/streams). WisDOT will work with WDNR, Fond du Lac and Sheboygan Counties, town boards, bicycle advocates and residents to provide a connection between the Fond du Lac Urban area and the Old Plank Trail.

ALTERNATIVES NOT SELECTED FOR DETAILED STUDY

Non-Highway Alternatives, Including Transit

Transportation needs can be addressed through the use of light rail, mass transit, and highway improvements. The implementation and/or expansion of any one of these modes must be economically reasonable and viable. Presently, there is no rail passenger service or public bus transit in the project area. Air service is limited to small aircraft. The unavailability of these services is due to insufficient demand. There are no prudent alternatives to driving in the project area.

Provisions for bicycling will be considered, possibly connecting the Old Plank Trail facility in Sheboygan County with the future bicycle/pedestrian path being built with the US 151 bypass of the City of Fond du Lac. Presently, bicycle groups use the lower traffic volume local road system, which do not provide for a continuous route through this corridor.

Transportation System Management

Transportation System Management (TSM), which is low-cost improvements to increase the traffic flow on the existing highway, was considered in the preparation of this document. The goal of transportation systems management is to increase the efficiency of the existing transportation system with a minimum of undesirable social and economic impacts.

An analysis of the existing roadway was made. The main problems observed are:

- High volume of trucks.
- Present ADT design standards require a capacity expansion in certain areas.
- Mix of through traffic, vehicles towing trailers, with local traffic and farm equipment.
- Numerous driveways and access points.
- Narrow pavement structure and gravel shoulders.

Increased traffic flow could be achieved by:

- Restricting and/or removing property owner's access to the highway.
- Adding turn lanes and pavement marking for auxiliary lanes at high volume intersections.
- Adding traffic signals at high volume intersections.
- Widen pavement (to 15 feet including shoulders) and gravel shoulders.

The establishment of park and ride lots is considered with all WisDOT major projects. To date, park and ride lots have not made a large impact on the traffic patterns where they have been constructed. Presently there is one park and ride lot in the project area.

Even in the short-term, TSM would not solve the capacity problems throughout the existing route. Because of this shortcoming, this alternative will not be considered for further analysis in this document.

Reconstruct Existing Roadway

This alternate would include reconstruction of the existing roadway in rural sections along with construction of auxiliary lanes. Much of this portion of WIS 23 was reconstructed in 1989 with some strip right-of-way acquisitions. Although these geometric improvements have enhanced safety, the increasing traffic volumes, truck traffic, farm machinery traffic and poor intersection layout are continually diminishing traffic safety. In

the urban areas, alternatives would include widening for left and right turn lanes, geometric improvements at intersections, and possible additions of traffic signals.

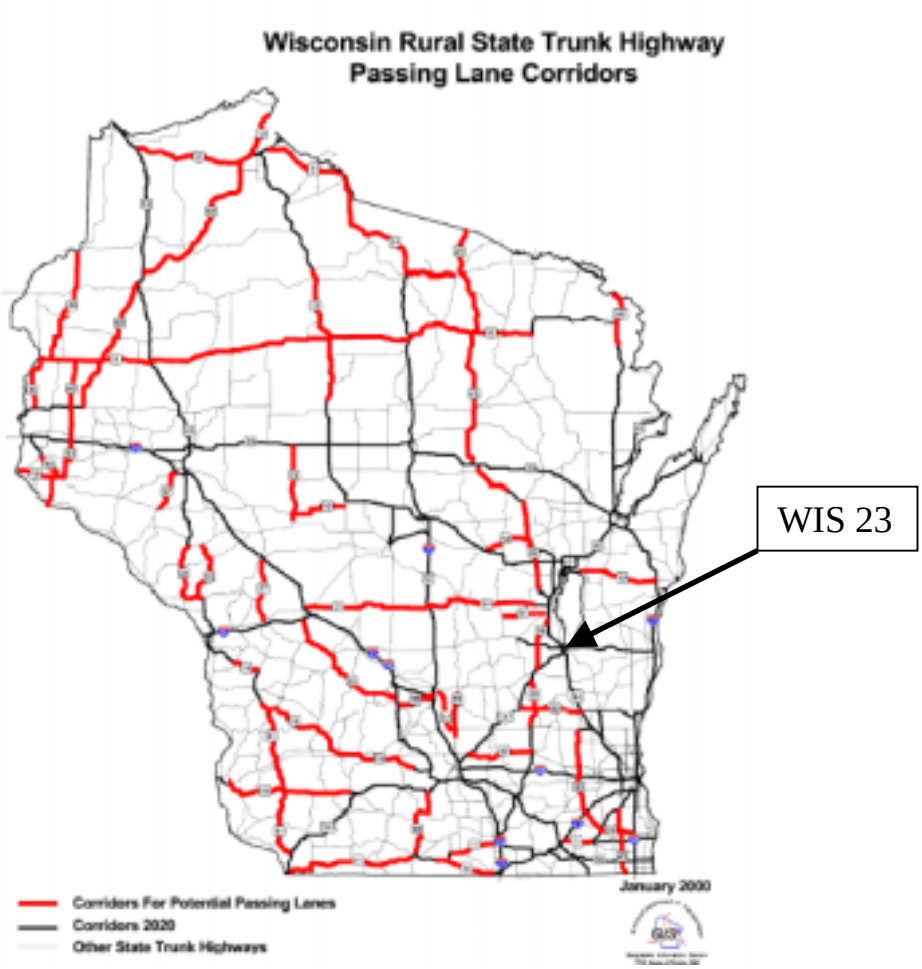
This alternate is not compatible with the long-term, area-wide transportation goals and does not satisfy the project capacity and safety needs. Therefore, this alternate has not been carried forward.

Three-Lane Roadway (Passing Lanes)

This alternative uses passing lanes along the WIS 23 corridor. This alternative does not fulfill the purpose and need of the project and will not be carried forth in detailed study for the following reasons:

- As a connector route in Wisconsin's Corridor 2020 report, WIS 23 is recommended as a four-lane roadway (See Exhibit I-1 in section I). WisDOT's policy and systems evaluation for a three-lane roadway in the Facility Design Manual (FDM) does not recommend WIS 23 as a highway with passing lanes. See Figure II-10 below.

Figure II-10



- The entire length of WIS 23 exceeds the current FDM design standards necessary for a four-lane facility in the design year (2030).

- Passing lanes will not improve the Level of Service (LOS) on WIS 23. The LOS would remain at level D (design year 2030). Passing lanes will only decrease the percent a vehicle spends following others from 74.8 to 70.6 percent of the time (see Appendix A for more information).

- According to *2000 traffic counts,* only 8 miles of WIS 23 fall within the traffic criteria for adding passing lanes, from County W to County T. This is 7 miles shorter than the recommended (15 to 50 miles)

highway segment to be upgraded with passing lanes according to WisDOT FDM 11-15-10 (see Appendix A for more information). The entire length of WIS 23 is forecasted to surpass the Corridor 2020 threshold to build four-lanes (8700 vehicles per day) in the year 2020, ten years before the typical design life of a highway is even met.

- The design year (2030) hourly volume of 1250 vehicles approach the *maximum* recommended volume for passing lanes (1400 vehicles per hour maximum).

- Within the 8-mile section between County W to County T, design standards allow only one passing lane in each direction, with recommended passing lane length of 1 to 2 miles. FDM design criteria states that passing lanes should have minimal driveway entrances and preferably no side roads. This is in addition to the merging lanes that cannot have any access points. Within this 8-mile section, there are 13 side roads and approximately 14 driveways per mile. Substantial road closures and access removals would be necessary to build passing lanes.

Passing lanes do not meet the long-term needs for WIS 23. Passing lanes provide only a ten-year solution to the traffic level. Passing lanes do not add capacity to the highway. Passing lanes do not meet design standards in the limited area possible. See Appendix A for passing lane information.

Free Flow Connection to US 151 Bypass

This alternate would connect WIS 23 with the new US 151 Bypass on the east side of the City of Fond du Lac, with a system interchange that provides traffic the ability to change highways without stopping **(**See Figure II-11). A diamond interchange is being constructed for the new intersection of US 151 Fond du Lac Bypass and WIS 23 about a half-mile west of County K on Johnson Street. Building a system interchange connection was drawn up and considered by WisDOT and the WIS 23 Public Advisory Committee. This alternative would result in substantial environmental impacts to the protected Niagara Escarpment ridge that it would bisect in a new location. Additionally, a new systems interchange would negate the effectiveness and need for the new interchange at Johnson Street. Traffic forecast models have shown that the movement between WIS 23 and US 151 will not be high enough to warrant a free flow systems interchange. After considerable review by the WisDOT and the WIS 23 Public Advisory Committee, further study of the alternate will not be considered.

Figure II-11

Northern Alternative Routes

Consideration was also given to northern alternative routes such as following County P into the Village of Glenbeulah to avoid any of the Kettle Morraine State Forest. It would then follow Glen Road westerly connecting into existing WIS 23 near Taft or Tower Roads. This alternative was not studied any further as it is too far away from the existing facility and would not alleviate the traffic on WIS 23. Traffic counts on existing County P supports this. Other variations of this would be to leave the existing alignment near Greenbush and follow a route adjacent to Sunrise Road westerly to Golf Course Road and into the existing highway near County UU. This alternative would accomplish the same goals of a southern alternative (Alternative 3 above) with greater impact to wetlands, more residential relocations, and higher costs. These possible alternatives were not carried forward for study as the initial environmental scan shows that the impacts are much greater than other viable options. See Figure II-11 above.

SELECTION OF A RECOMMENDED ALTERNATIVE

All alternatives presented in the Draft EIS remain under consideration. Selection of a recommended alternative for identification and presentation in the Final EIS will be made only after evaluation of all comments received as a result of the public hearing and following review of the Draft EIS by the public and agencies.

The Value Planning Study of July 2003 evaluated the alternates described in this section. The study split the project into four segments of WIS 23. The segments and main recommendations are as follows:

- County K to County UU
  Build a four-lane urban type highway from US 151 to just east of County UU. An Access Management Plan should be in place to restrict current and future access to WIS 23. (Alternatives 1-6)

- County UU to County W
  Build a four-lane divided highway along the existing highway. (Alternatives 1-2)

- County W to County T
  Purchase right-of-way for four lanes on Alternate 2 in Segment B and build only two lanes for this project. The two-lane highway would follow exiting up to County T. (Alternative 2)

- County T to County P
  Match the four-lane rural section coming out of Plymouth and narrow the section through the state forest using median barrier. The divided rural four-lane section would continue to about County T near Greenbush. (Alternatives 1-6)

WisDOT will evaluate these Value Planning Study recommendations, along with environmental impacts, municipal input, agency compliance, and public comment to select the preferred alternative.